

Discrete Structures TR2 – Number Systems Quiz

Name and ID:

1. Write the decimal number $(63)_{10}$ in its binary (base-2) and its ternary (base-3) representations.

2. Write the twelve decimal numbers $(1)_{10}, (2)_{10}, \dots, (12)_{10}$ in their base-5 representation.

3. Which number is larger $(222)_4$ or $(101010)_2$?

4. In the base-15 system: $A = 10$, $B = 11$, $C = 12$, $D = 13$, and $E = 14$. What is the decimal value of the number $(ACE)_{15}$?

5. Characterize **all** the base-3 numbers that are multiples of 3 (those numbers that are divisible by 3)?

6. What happens to a binary number when a 1 is added after the last (least significant) digit?
Examples: 110 becomes 1101 and 1011 becomes 10111.